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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)			
	10/554,041	DIP, TATIANA MACIULIS			
Office Action Summary	Examiner	Art Unit			
	R. Alexander Smith	2859			
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply					
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).					
Status .					
<ul> <li>1) Responsive to communication(s) filed on</li> <li>2a) This action is FINAL. 2b) This action is non-final.</li> <li>3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.</li> </ul>					
Disposition of Claims					
4) ⊠ Claim(s) 1 and 41-79 is/are pending in the application.  4a) Of the above claim(s) is/are withdrawn from consideration.  5) □ Claim(s) is/are allowed.  6) 図 Claim(s) 1,41-44,46-52,57-62,65,67-72 and 74-79 is/are rejected.  7) 図 Claim(s) 45 53-56 63 64 66 73 is/are objected to.  8) □ Claim(s) are subject to restriction and/or election requirement.					
Application Papers					
9)⊠ The specification is objected to by the Examine 10)⊠ The drawing(s) filed on 21 October 2005 is/are:  Applicant may not request that any objection to the Replacement drawing sheet(s) including the correct 11)□ The oath or declaration is objected to by the Ex	a) accepted or b) ⊠ objected drawing(s) be held in abeyance. See ion is required if the drawing(s) is ob	e 37 CFR 1.85(a). jected to. See 37 CFR 1.121(d).			
Priority under 35 U.S.C. § 119					
<ul> <li>12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).</li> <li>a) All b) Some color None of: <ol> <li>Certified copies of the priority documents have been received.</li> <li>Certified copies of the priority documents have been received in Application No.</li> <li>Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</li> </ol> </li> <li>* See the attached detailed Office action for a list of the certified copies not received.</li> </ul>					
Attachment(s)  1) Notice of References Cited (PTO-892)  2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  3) Information Disclosure Statement(s) (PTO/SB/08)  Paper No(s)/Mail Date	4) Interview Summary Paper No(s)/Mail D: 5) Notice of Informal F 6) Other:	ate			

#### **DETAILED ACTION**

## **Drawings**

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "10" disclosed on page 15 as a collecting receptor.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

# Specification

2. The disclosure is objected to because of the following informalities. Appropriate correction is required.

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a) Throughout the specification starting on page 7, and including line 6 of the abstract, the applicant has used the word "taw" or "taws" in lieu of --thaw-- and its variants. The definition of "taw" is: 1) to tan, 2) a marble for shooting or the line for shooting the marble, or 3) a square dance partner. The applicant needs to review the entire specification and replace "taw" with --thaw-- or its variants.

Furthermore, "thaw" at the end of the abstract is grammatically and idiomatically incorrect. That is "has been thaw" should be --has been thawed--.

- b) Page 12 line 4, "hat" should be --that--.
- c) On page 16 in lines 6-7, the applicant indicates that the spring is relaxed. How can the spring pull on the sliding piston since if relaxed the spring exerts no force? That requires a tensioned/compression state of some sort, i.e., compression, tension, torsion, bending, etc. It appears to the examiner that ", which is relaxed," should be --, while relaxing, --
- d) The applicant has used the word "tensoactive" in the specification and claim 59 which makes it unclear as to what the applicant is addressing. A text search reveals about 65 hits throughout the Patent Office of which only one appears to explain what this term represents, i.e., US 6,824,605, which suggests it is a surfactant. Furthermore, a text search in Google seems to support that "tensoactive" is a Spanish designation for a surfactant. Therefore the examiner is treating "tensoactive" as a surfactant. The examiner respectfully requests clarification.

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e) Where applicant acts as his or her own lexicographer to specifically define terms, the applicant cannot take uncommon or unrecognized definitions without clearly redefine the term(s) in the specification. The following are noted as having unrecognized definitions as applied by the applicant. The definitions are provided by the Merriam-Webster's 11<sup>th</sup> Collegiate Dictionary.

(i) Shrivel is defined as: 1. to draw into wrinkles especially with a loss of moisture, 2a. to become reduced to inanition, helplessness, or inefficiency, b. DWINDLE, or 3. to cause to shrivel.

In the applicant's case, the internal ridges or ribs, i.e., "shrivels", do not shrivel.

(ii) Sensor is defined as 1. a device that responds to a physical stimulus (as heat, light, sound, pressure, magnetism, or a particular motion) and transmits a resulting impulse (as for measurement or operating a control), 2. a sense organ.

The applicant's "sensor" or "indicative sensor" is an indicator but does not meet a reasonable definition of transmitting a resulting impulse.

(iii) Communication device is defined as a device that performs 1. an act or instance of transmitting; 2a. information communicated b. a verbal or written message; 3a. a process by which information is exchanged between individuals through a common system of symbols, signs, or behavior; also exchange of information b. personal rapport; 4a. a system (as of telephones) for communicating b. a system of routes for moving troops, supplies, and vehicles c. personnel engaged in communicating; 5. plural but singular or plural in construction a. a technique for expressing ideas effectively (as in speech), b. the technology of the transmission of information (as by print or telecommunication).

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In this case the applicant's "communication device" is a securement means or a connection device such as a tether or lanyard.

(iv) Form is defined as 1a. the shape and structure of something as distinguished from its material, b. a body (as of a person) especially in its external appearance or as distinguished from the face, c. archaic: BEAUTY; 2. the essential nature of a thing as distinguished from its matter: as a. IDEA b. the component of a thing that determines its kind; 3a. established method of expression or proceeding: procedure according to rule or rote; also: a standard or expectation based on past experience: PRECEDENT, b. a prescribed and set order of words: FORMULA; 4. a printed or typed document with blank spaces for insertion of required or requested information: 5a.(1) conduct regulated by extraneous controls (as of custom or etiquette): CEREMONY, (2) show without substance, b. manner or conduct as tested by a prescribed or accepted standard, c. manner or style of performing or accomplishing according to recognized standards of technique; 6a. the resting place or nest of a hare, b. a long seat: BENCH; 7a. a supporting frame model of the human figure or part (as the torso) of the human figure usually used for displaying apparel, b. a proportioned and often adjustable model for fitting clothes, c. a mold in which concrete is placed to set; 8. the printing type or other matter arranged and secured in a chase ready for printing; 9a. one of the different modes of existence, action, or manifestation of a particular thing or substance: KIND, b. a distinguishable group of organisms, c. LINGUISTIC FORM, d. one of the different aspects a word may take as a result of inflection or change of spelling or pronunciation, e. a mathematical expression of a particular type: 10a. (1) orderly method of arrangement (as in the presentation of ideas): manner of coordinating elements (as of an artistic production or course of reasoning) (2) a particular kind or instance of

such arrangement, b. PATTERN, SCHEMA, c. the structural element, plan, or design of a work

of art — compare CONTENTs d. a visible and measurable unit defined by a contour : a

bounded surface or volume.

With respect to the use of "a hollow form" as applied by applicant, although there are

many definitions of form there are none that fit when the form is hollow other than a mold in

which concrete (or other viscous material that hardens) is placed to set. As applied by applicant

form is not an entity but is a shape or structure of something wherein that something is not

defined. In this case a tube, a cylinder, etc. or in consideration of the grouping defined in claim

72, a hollow elongated housing.

(v) The applicant should note that the problems above extend to both the specification

and to the claims.

Claim Objections

3. Claims 71-74 are objected to because of the following informalities:

Claim 71: "a relaxed spring" in line 5 is objected to for the reason as noted in the specification

objection applied above.

Claim 72:

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a) "wherein the hollow form comprises a hollow form" is confusing since it is unclear as

to how a hollow form can comprise itself or another hollow form.

b) The use of "cross-sectional" makes the claim language confusing because it is unclear

as to what is meant. For example a hollow form having a shape of a cross-sectional circular tube

appears to the examiner as being a hollow form having a shape of either a circle or a circular ring

rather than being a circular tube. Is this the applicant's intent?

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for

patent in the United States.

5. Claims 1, 41-43, 46-51, 57, 62, 67, 71, 72, 75, 76 and 79 are rejected under 35

U.S.C. 102(b) as being anticipated by US 2,788,282 to Hammond, Jr. [hereinafter Hammond]

Hammond discloses a sensor (figure 3) comprising

a hollow tube (5) having an open end (at the top end having stopper 6b) and a closed end

(at the bottom); a piston (7b) positioned inside the hollow tube, wherein the piston creates a first

space (with mixture 10) between a first side of the piston and the open end and a second space

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(with spring 8) between a second side of the piston and the closed end, the piston having a circumference in contact with the hollow tube, a first fluid (10) in the first space; a force generating object (8) in the second space; and media (piston 7b) associated with the hollow tube to provide at least one indication of the occurrence of a temperature rise in an ambient in which the sensor is immersed.

With respect to the piston having a circumference in contact with the hollow tube in claim 41: As claimed the limitation is met via the discussion of the piston sliding freely within the tube which means the piston's circumference must contact the sides of the tube else the piston would not be sliding.

Hammond discloses:

the piston is irreversibly movable within the hollow tube (column 4 lines 13-16),

the first fluid in the first space is frozen in a solid state (column 4 lines 1-13),

the force generating object exerts a force on the second side of the piston thereby tending to push the piston towards the open end of the hollow tube,

the force generating object comprises a spring,

the first fluid prevents movement of the piston when the first fluid is frozen,

the first fluid is initially in a frozen state and wherein exposure of the sensor to an ambient temperature above a melting point of the first fluid liquefies at least a portion of the frozen first fluid allowing movement of the piston (column 4 lines 1-16),

the first fluid comprises a non-toxic fluid (water by itself, column 2 lines 44-49, or as modified dependent on what type of alcohol or other chemicals are added to affect the melting temperature),

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the hollow tube comprises a hollow tube constructed of a rigid material (glass or any other suitable plastic),

at least one additive mixed with the first fluid, wherein the at least one additive is selected from the group consisting of jelly, salts, fluid freezing modifiers, and fluid thawing modifiers (in this case, salt, alcohol or other chemicals substances, column 2 lines 43-47).

a collecting receptor for collecting any first fluid expelled from the first space in the hollow tube (is met by the fluid leaking by the piston into the second space),

a course limiter (wire 15 with hook 16) inside the hollow tube to limit the movement of the piston within the hollow tube.

Hammond discloses a method for monitoring frozen goods, comprising: placing a sensor within the vicinity of a frozen good to be monitored (column 1 lines 15-64), the sensor comprising: (as discussed above) a hollow form having an open end and a closed end; a piston positioned inside the hollow form, wherein the piston creates a first space between a first side of the piston and the open end and a second space between a second side of the piston and the closed end, the piston having a surface in contact with the hollow form; a first fluid in the first space, wherein the first fluid is in a frozen state; and a force generating object in the second space,

the first fluid has a melting point similar to a melting point of a fluid in the frozen good, the frozen good comprises at least one frozen good selected from the group consisting of food, blood bags, medicine, resins, and pharmaceuticals (in this case food).

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6. Claims 71 and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by US 3,965,848 to Shotkin.

Shotkin discloses a sensor (figure 8), comprising: a hollow form having an open end (at

cap 36) and a closed end; a moveable piston (20) positioned in the closed end of the hollow

form: a cap (36) positioned in the open end of the hollow form; a relaxed spring (24) attached to

the moveable piston and the cap; and a fluid (18) in the hollow form between the moveable

piston and the cap, the fluid capable of being frozen, and wherein the hollow form comprises a

hollow form having a shape selected from the group consisting of a cross-sectional circular tube,

a cross-sectional square tube, and a cross-sectional polygonal tube.

With respect to the fluid being capable of frozen: In this case frozen is met since at

temperatures below 99°F the material solidifies which meets the definition of frozen relative to

temperatures above 99°F in which it starts melting or liquefying. The definition of freeze being

used is to convert from a liquid (above 99°F) to a solid by cold (below said temperature).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the

invention was made.

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8. Claims 44, 61 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond in view of US 3,233,459 to Gleason et al. [hereinafter Gleason].

Hammond teaches all that is claimed as discussed in the above rejections of claims 1, 41-43, 46-51. 57, 62, 67, 71, 72, 75, 76 and 79 except for a releasable cap positioned in the open end of the hollow tube wherein the releasable cap maintains the first fluid in the first space and wherein the releasable cap may be released upon expansion of the first fluid due to freezing, and a communication device connected to the releasable cap and the hollow tube, wherein the communication device maintains connection between the releasable cap and the hollow tube when the releasable cap is detached from the open end of the hollow tube, and an additive mixed with the first fluid, the additive selected from the group consisting of dyes, pigments, and coloring.

Gleason discloses a temperature device wherein upon expansion of a fluid (6 and 8) a cap (wax seal 11) is released and which includes a communication device which maintains connection between the cap and the tube (via screw 9 to piston 3 within the tube 1) in order to provide two telltale indications (via the release of the cap and via the leakage of the liquid in the first space from the hollow tube). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device, taught by Hammond, to include a releasable cap with a communication device, as suggested by Gleason, in order to provide a more noticeable indication via two telltale indications, as taught by Gleason.

With respect to claim 68 and an additive mixed with the first fluid, the additive selected from the group consisting of dyes, pigments, and coloring: Gleason discloses that the liquid at the top where the cap releases is colored green due to its being cupric chloride but also teaches that a dye can be added to a colorless liquid (6) to give it a red color for indication purpose upon mixing with the other colorless liquid (8). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to add an additive to the first fluid, taught by Hammond, wherein the additive is dye, pigment or coloring, as suggested by Gleason, in order to make the indication or leakage of fluid more apparent.

9. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond in view of US 4,509,449 to Chalmers and US 6,422,746 to Weiss et al.

Hammond teaches all that is claimed as discussed in the above rejections of claims 1, 41-43, 46-51, 57, 62, 67, 71, 72, 75, 76 and 79 except for the media associated with the hollow tube to provide at least one indication of the occurrence of a temperature rise in an ambient in which the sensor is immersed comprises an engraving on the hollow tube coinciding with the position of the piston within the tube when the first fluid is frozen

Chalmers discloses a temperature/time indicator wherein spaced markings (16 or 23) is provided in order to allow visual monitoring as indicating member (11) moves within the housing (13). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the sensor and method, taught by Hammond, to include spaced markings and a marking coinciding with the position of the piston within the tube when the first

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fluid is frozen, as suggested by Chalmers, in order to allow the user to visually monitoring the temperature/time progression of the piston within the tube or hollow form, as taught by Chalmers.

With respect to the tube having the engraving: Chalmers discloses that markings are added to monitor movement but does not address the details of application. Weiss et al. discloses an device employing as a thermometer and teaches that the stem (20) can have its markings, i.e., scales, scribed, etched or painted onto the interior or exterior (column 4 lines 33-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the marking(s), as engravings, as taught by Weiss et al., in order to provide a mark that cannot be abraded off or affected by handling or chemicals.

10. Claims 58 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond in view of US 6,472,214 to Patel.

Hammond teaches all that is claimed as discussed in the above rejections of claims 1, 41-43, 46-51. 57. 62, 67, 71, 72, 75, 76 and 79 except for

a granulated solid material mixed with the first fluid, wherein the granulated solid material promotes nucleation of the first fluid, and

a tensoactive material mixed with the first fluid, wherein the tensoactive material facilitates the movement of ice crystals in the first fluid when in a partially frozen state.

Patel discloses a freeze monitoring device indicator for determining the temperature history of perishable products as identified in the background. Patel discloses that granulated

solid material can be used to promote nucleation and that tensoactive material, i.e., surfactant. can be used to promote uniform crystallization along with other additives (see column 5 lines 29-35 and column 10 lines 27-58). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use solid material to promote nucleation and tensoactive material to facilitate movement of ice crystals in order to insure uniform crystallization and a fine dispersion at the freezing point.

11. Claims 60 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond in view of US 5,735,607 to Shahinpoor et al.

Hammond teaches all that is claimed as discussed in the above rejections of claims 1, 41-43, 46-51, 57, 62, 67, 71, 72, 75, 76 and 79 except for thermal insulation surrounding at least a portion of the sensor.

Shahinpoor et al. discloses that insulation can be added in order to retard heat transfer to the sensor to prevent short term activations, e.g., during proper handling (figure 8 and column 5 lines 1-8). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the sensor and method to include thermal insulation to surround at least a portion in order to prevent short term activation, as taught by Shahinpoor et al.

12. Claim 65 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond in view of Gleason and US 5,735,607 to Shahinpoor et al.

Hammond teaches all that is claimed as discussed in the above rejections of claims 1, 41-43, 46-51, 57, 62, 67, 71, 72, 75, 76 and 79 except for a breakable thin membrane attached to the open end of the hollow tube, wherein the thin membrane contains the first fluid in the first space of the hollow tube.

Gleason discloses a temperature device wherein upon expansion of a fluid (6 and 8) has a closure in the form of a wax seal 11 which breaks at the edges in order to provide two telltale indications (via the release of the cap and via the leakage of the liquid in the first space from the hollow tube). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device, taught by Hammond, to include a closure, as suggested by Gleason, in order to provide a more noticeable indication via two telltale indications, as taught by Gleason.

Shahinpoor et al. discloses that a closure (720 and 820) can be used that is breakable (figures 7A-8B). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the closure in the form of a wax seal, as taught by Hammond as modified by Gleason, to be a thin breakable membrane, as taught by Shahinpoor et al. in order to provide a more secure and less temperature sensitive closure technique.

13. Claims 69 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond.

Hammond teaches all that is claimed as discussed in the above rejections of claims 1, 41-43, 46-51, 57, 62, 67, 71, 72, 75, 76 and 79 and a piston having at least a first side (with an

opening) and a second side and said piston being colored red so that it is noticeable and in contact with the hollow tube.

Hammond does not disclose the piston further comprises at least one horizontal stripe on the circumference of the piston in contact with the hollow tube, and at least one of the sides having a shape selected from the group consisting of a concave shape and a convex shape.

With respect to piston having at least one horizontal stripe on the circumference: This limitation with regard to the horizontal striping on the circumference of the piston is only considered to be an obvious modification of the attention getting characteristics, in this case the coloring of the piston red taught by Hammond, since it appears to the Examiner that a change in the indicating element and its proportioning is nothing more than one of numerous shapes of color schemes and proportioning of colors that a person having ordinary skill in the art will find obvious to provide in order to make the indicator noticeable and visually attractive to the user.

With respect to the sides and the shapes: Hammond discloses a piston having a first side with an opening (13) and a lip (14) so that the lip can catch upon the wire with hook (16). The shape of the at least one side being concave or convex (in this case concave) is only considered to be an obvious modification of the side and its opening because the courts have held that a change in shape or configuration, without any criticality, is within the level of skill in the art as the particular shape claimed by Applicant is nothing more than one of numerous shapes that a person having ordinary skill in the art will find obvious to provide. In re Dailey, 149 USPQ 47 (CCPA 1976). In this case to form the opening cheaply via drilling the bore or by molding.

14. Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shotkin in view of US 4,509,449 to Chalmers.

Shotkin teaches all that is claimed as discussed in the above rejections of claims 71 and 72 except for spaced markings on the hollow form, the spaced markings in a position relative to the moveable piston.

Chalmers discloses a temperature/time indicator wherein spaced markings (16 or 23) is provided in order to allow visual monitoring as indicating member (11) moves within the housing (13). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the sensor and method, taught by Shotkin, to include spaced markings relative to the moveable piston in order to assist the user in visually determining the progression of the piston within the hollow form, as taught by Chalmers.

### Conclusion

- 15. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. The prior art cited in PTO-892 and not mentioned above disclose related indicators, methods, or components thereof.
- 16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to R. Alexander Smith whose telephone number is 571-272-2251. The examiner can normally be reached on Monday through Friday from 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R. Alexander Smith Primary Examiner

Technology Center 2800

RAS April 27, 2007